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SUSTAINABLE DEVELOPMENT AND INTERNATIONAL ECONOMIC COOPERATION: FOOD AND AGRICULTURAL DEVELOPMENT

Food production, including agro-industrial products, international markets for agricultural and tropical products and global food security

Report of the Secretary-General

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I. INTRODUCTION

1. The General Assembly, in its resolution 47/149 of 18 December 1992 on food and agricultural development, requested the Secretary-General, in consultation with relevant organs, organizations and bodies of the United Nations system, to submit to the General Assembly at its forty-ninth session a report on food production, including agro-industrial products, international markets for agricultural and tropical products and the state of global food security, taking into particular account the needs of all developing countries, including net food-importing countries.

2. In response to that request, the present report provides an overview of recent trends regarding global food and agricultural development, including the state of global food security. Given the recent completion of the Uruguay Round of multilateral trade negotiations under the auspices of the General Agreement on Tariffs and Trade (GATT), the report also contains an initial assessment of the likely implications of the Agreement on Agriculture for agricultural development and trade, including the possible impact on net food-importing countries. The issue of sustainability in relation to agricultural production, trade and the environment is also discussed.

3. Agricultural products, including temperate zone and tropical products, have constituted a declining proportion of world merchandise trade since the Second World War. However, world trade in agricultural products which have not declined in absolute terms remains substantial, amounting to more than $350 billion in 1992, 1/ and is of vital importance to many countries, both exporters and importers. Food products account for about three quarters of all agricultural trade and raw materials for the remaining quarter. Although the share of agriculture in world production (gross domestic product) and the proportion of the labour force it employs continues to decline over time, for a large number of countries, particularly developing countries, the agricultural sector is still of key importance in both absolute and relative terms.

4. The Uruguay Round Agreement on Agriculture will require substantial adjustments in national policies affecting agricultural production and trade, with major implications for world agricultural markets and global food security, including in particular the food security of low-income food deficit countries.

5. Given recurrent and chronic shortfalls in food production in a large number of food deficit areas, as well as the ever-increasing pressure of population growth, the inter-linkages between sustainable agricultural development, the environment and international trade are likely to remain at the top of the international agenda during the 1990s.

6. Chapter II provides an overview of recent trends in world production and trade of agricultural and tropical products, including agro-industrial products. Chapter III discusses recent developments regarding global food security. The principal elements of the Uruguay Round Agreement on Agriculture are analysed in chapter IV, as well as the main implications of the Agreement. Finally, chapter V considers issues of sustainable development in relation to agricultural production and food security.

II. WORLD PRODUCTION AND TRADE OF AGRICULTURAL AND TROPICAL PRODUCTS, INCLUDING AGRO-INDUSTRIAL PRODUCTS

7. This chapter provides an overview of world production and trade of agricultural products, focusing on salient developments in global and regional food and agricultural production (including agro-industrial production), and recent trends in trade flows and international markets for agricultural products.

A. Recent trends in production

8. The global supply of food and agricultural products declined in 1993, reversing the positive trend of the first three years of the decade (see table II.1). Total agricultural production declined by 1.2 per cent while supplies of food per capita fell by 2.7 per cent. Declines in production were principally experienced in the industrialized countries, where agricultural production and food production per capita fell by 5.2 per cent and 6 per cent, respectively. In North America, agriculture fell by 10.3 per cent, while food per capita dropped by 11.7 per cent. Europe experienced a 1.8 per cent decline in agricultural production.

9. There have been substantial reductions in per capita food supplies for the former Union of Soviet Socialist Republics over the 1990s and similar, although not so pronounced, declines have been experienced by other Eastern European countries in transition.

10. For developing countries as a whole, agricultural production rose in 1993 by 1.7 per cent; however, in per capita terms, food production remained stagnant. Strong production performance was noted for the African region, which increased agricultural production by 3.2 per cent, reversing supply shortfalls in the preceding year. However, in per capita terms, food supplies did not increase substantially above 1992 levels. Among the other developing country regions, probably only the Far East increased output in 1993, albeit by only 1 per cent, with production declining slightly in China and increasing moderately in India. In Latin America and the Caribbean indications were of a 1 per cent decline.

11. Food and agricultural production for low-income food deficit (LIFD) countries 2/ has been positive over the period of the 1990s up to the present. Total agricultural production increased by 2.5 per cent in 1993, and per capita food supplies rose by slightly less than 1 per cent over 1992 levels. The least developed countries have also experienced positive agricultural production growth in the early 1990s. Total agricultural production rose by a significant 3.8 per cent in 1993, outpacing population growth, while food supply per head also rose by 1.1 per cent.

12. According to projections of the Food and Agriculture Organization of the United Nations (FAO), the medium-term outlook for world food and agriculture in the 1990s is for slow progress in increasing world agricultural production and world food supply. 3/ Modest increases in area cultivated combined with declining growth of agricultural productivity contribute to a projection that

average annual supply growth over the 1990s would remain at about the same level as that of the 1980s.

Table II.1. Annual changes in agricultural and food production

(Percentage) a/

Regions	Agriculture				Food per capita			
	1990	1991	1992	1993	1990	1991	1992	1993
Africa	0.3	4.2	-2.6	3.2	-2.6	1.1	-5.7	0.2
Latin America	0.5	1.5	1.3	-1.0	-1.9	-0.4	0.4	-1.5
Near East	10.2	-0.1	6.0	-	7.9	-2.4	1.9	-
Far East	4.1	2.8	2.5	1.0	2.4	0.2	1.3	-
Other developing	1.3	-1.7	1.3	-	-0.3	-2.7	1.8	-
TOTAL DEVELOPING	3.4	2.4	1.9	1.7	1.4	-0.1	0.4	0.2
North America	4.2	-0.4	6.9	-10.3	2.2	-1.9	6.6	-11.7
Europe	-0.6	-0.7	-2.9	-1.8	-1.0	-1.1	-3.3	-2.1
Oceania	2.0	0.7	3.7	-1.8	0.4	-1.5	4.8	-1.1
Former USSR	-0.3	-12.7	-3.9	-5.0	-0.6	-13.7	-4.0	-6.4
Other developed	-1.9	-1.9	-6.5	-	-2.7	-2.5	-7.5	-
TOTAL DEVELOPED	0.9	-3.0	0.1	-5.2	0.1	-3.8	-0.1	-6.0
WORLD	2.3	0.1	1.2	-1.2	0.1	-2.0	-0.1	-2.7

Source: United Nations Conference on Trade and Development (UNCTAD) secretariat calculations based on FAO Agrostat 1994.

a/ Annual changes are calculated on the basis of annual production in tonnes.

13. Taking into account a projected slow-down in population growth, the average growth of agricultural production per capita for the developing countries is forecast at an annual rate of 0.1 per cent. In Africa it would decline at an average rate of 0.4 per cent, while it would rise at a rate of 0.2 per cent in Latin America and by 0.1 per cent in both the Near East and Far East regions.

14. The outlook for world trade in food and agriculture suggests a decline in growth rates to less than half the rates achieved in the 1980s. This projection is based on the impact of recent policy reforms in the major industrialized countries and of consumer satiation for tropical products. This will have the effect of reducing both agricultural exports and imports.

15. As regards the developing countries as a group, it is projected that they will become net agricultural importers in this decade. Factors in this trend include the structure of world trade in which developing countries import food products with high income elasticities and export commodities with low income and price elasticities; continued adverse terms of trade; and continued market access restrictions in industrialized country markets for processed agricultural products.

B. International markets for agricultural and tropical products and trends in trade

16. Several important demand and supply factors influenced world agricultural markets in 1993. Demand for agricultural commodities was boosted by strong growth in economies and by the decline in interest rates and expectations of growth in many other economies, while a reduced rate of contraction was expected in the former USSR. On the supply side the year was marked by reduced output of a number of commodities, particularly of maize and soybeans in the wake of flood devastation in the United States. As a result, reductions in end of season stocks were in prospect for commodities such as wheat, coarse grains, rice, sugar, soybeans, cocoa, cotton and natural rubber. Supplies from marine fisheries reached or surpassed their sustainable limit and further restrictions of supplies of some sorts of timber on to the international market were put in place.

17. Following four consecutive years of decline, prices for commodities remained depressed during much of 1993 when the price index of commodities (including fuels) fell by 3.5 per cent. For a number of agricultural commodities average prices for 1993 were below those for 1992. However, for several among them, prices started to recover during the fourth quarter of 1993 and through the first half of 1994 to levels higher than those prevailing a year before, reflecting to a large extent the influence of supply-side factors. Reduced output and producers' moves led to a reversal of the decline that had halved prices of tropical beverages since 1979-1981, in particular coffee for which the price increased by 15.5 per cent in 1993 and by 51.6 per cent from December 1993 to May 1994 and cocoa, for which prices continued to rise, although at a much lesser pace. Surges in prices were also observed for food products, in particular sugar, wheat, rice, soybeans and bananas and for several agricultural raw materials. Nevertheless the price trends observed in mid-1994 indicate that for many of these commodities, peaks had been reached and prices are falling again. Overall, for agricultural, fishery and forestry commodities the United Nations export price indices for 1993 point to a 6 per cent decrease compared to the previous year. However, the decline for commodities exported by the developing countries was limited to 3 per cent as these countries benefited from increase in some of their main exports, notably tropical beverages, sugar and oilseeds.

18. Agricultural commodities exported by developing countries maintained the same overall real price levels in 1993 as in 1992. However, relative to the years 1970-1981 the real prices or barter terms of trade for their agricultural, fishery and forestry export products had fallen by 39 per cent while those of exports by the developed countries had declined by 23 per cent. The greater

decline for exports of the developing countries reflects declines in excess of 30 per cent for beverage crops, sugar, oilseeds, natural fibres and natural rubber.

19. The global value of trade in agricultural, fishery and forest products increased in 1992 by 5 per cent and slightly more for agricultural exports alone. Indications for 1993 were for export earnings in dollars to at least maintain the level achieved in 1992. In contrast to growth in agricultural, fishery and forestry exports in the developing countries as a whole in 1992, Africa's exports fell 8 per cent to $11,000 million (table II.2), with a similar fall in the agricultural component to $8,300 million. The decline in Africa's exports partly reflected decreased earnings from coffee, cocoa, cotton, tobacco and the effects of the widespread drought. In real terms, the region's purchasing power of export earnings declined by 30 per cent compared to 1979-1981.

20. Imports of agricultural, fishery and forestry products expanded in all regions in 1992 (table II.2). The largest expansion was in Africa where food imports in particular increased by 26 per cent owing to the effects of drought on crop production in the region. It was also of concern that in 1992 Africa turned from being a region with reasonably balanced trade in agricultural, fishery and forestry products to a position of substantial net deficit. Both Asia and Latin America and the Caribbean maintained their net export positions in these products while the Near East continued to be the main net importing developing region.

Table II.2. World trade in agricultural, fishery and forestry products

(Billions of U.S. dollars)

	Exports			Imports		
	1988-1990 Average	1991	1992	1988-1990 Average	1991	1992
World total	432	466	491	471	505	536
Developing countries	116	122	124	105	113	124
Latin America	39	40	40	16	19	22
Africa	12	12	11	12	12	14
Near East	7	8	8	25	24	26
Far East	56	63	64	51	57	61
Low-income food-deficit a/	46	48	47	40	40	50
Developed countries	316	343	368	366	392	412

Source: FAO Statistics Division.

a/ Low-income food-deficit countries (with per capita gross national product of $1,235 or less in 1992 and net imports of cereals).

C. Production and trade of agro-industrial products

21. While primary agricultural commodities as a share of world trade has been declining, the share of processed agricultural products, especially food products, has been rising, reflecting a growing world market for value-added, consumer-oriented food products. For example, it is estimated that for Organisation for Economic Cooperation and Development (OECD) countries, processed food products (including beverages and tobacco) now account for more than 50 per cent of their total agricultural trade. 4/ Total exports of agro-industrial products 5/ from OECD countries amounted to $423.5 billion in 1992, while imports into these countries reached $437.5 billion. Table II.3 shows that trade among OECD countries themselves, which accounted for 68.4 per cent of imports and 72.5 per cent of exports of agro-industrial products in 1980, amounted to more than 75 per cent in each case in 1992.

22. The shares in imports of agro-industrial products by OECD countries from developing countries vary considerably according to regions and to product groupings. With the exception of manufactures of leather and rubber, the participation of developing countries as a group in this trade remained at a lower level than in imports of all agro-industrial products. For most product groups, the shares for Asian developing countries, in particular those in south and south-east Asia, are in general higher than those for other country groupings. This is particularly true for all agro-industrial products and for manufactures of textiles, leather, wood and cork, and rubber. African countries, as well as the least-developed countries, have small participation in this trade. The shares for these developing country groupings in imports by OECD countries have generally decreased or remained at the same level during the period 1980-1992.

23. The importance of trade in these products for developing countries is indicated by the average dependency ratios with respect to their exports of agro-industrial products. Developing countries in America are relatively more dependent on such exports than countries in the other two regions. African countries appear to be less dependent on exports of agro-industrial products as their export structure remained largely unchanged, mainly consisting of raw agricultural materials and other raw materials and fuels. The average dependence ratios in 1992 were 18.9 per cent for developing countries in America, 14.2 per cent for Africa and 13 per cent for Asian developing countries.

Table II.3. OECD countries: Trade in agro-industrial products

(Billions of U.S. dollars and percentages)

Partner	Year	Exports		Imports	
		Value	% share	Value	% share
World	1980	224.1	100.0	244.3	100.0
	1992	423.4	100.0	437.5	100.0
OCED	1980	162.5	72.5	167.2	68.4
	1992	320.7	75.7	330.5	75.5
Developing countries	1980	45.5	20.3	58.1	23.8
	1992	74.6	17.6	79.5	18.2
China	1980	1.4	0.6	2.5	1.0
	1992	3.1	0.7	10.7	2.4
Eastern Europe	1980	7.1	3.2	13.1	5.4
	1992	7.6	1.8	6.6	1.5

Source: UNCTAD secretariat calculations based on United Nations Statistical Office data.

III. GLOBAL FOOD SECURITY

A. Current situation and short-term outlook

24. Global supplies of staple foods, comprising the major cereals, pulses, and roots and tubers, are estimated by FAO to have contracted in 1993 by around 4 per cent from 1992. 6/ The bulk of this decline was on account of sharply reduced coarse grain production in the United States. For developing countries as a whole, total production was indicated to have risen by some 2 million tons and by 3 million tons in the LIFD countries.

25. World meat production stagnated in 1993, constrained by higher feed costs and animal disease outbreaks. Although the share of the developing countries in total meat production rose in 1993, their production growth slowed down considerably compared with previous years. Of special concerns was the contraction of output in Africa where livestock plays an important role in food security. Developed countries meat output fell for the third consecutive year, influenced by ongoing policies to reduce production in Europe and restructuring in the Commonwealth of Independent States (CIS).

26. Among other foods which make a significant contribution to world food supplies, oils and oilseeds are of particular importance for food security. Global production of fats and oils was estimated up by 2 per cent in 1993, to 87 million tons. In developing countries, overall production was estimated to have grown by 6 per cent. By contrast, production appeared to have contracted in developed countries, mainly reflecting reduced output of oil crops in Canada, the European Economic Community and the countries of the former USSR.

27. The state of world food security can be analysed by a set of global food indicators developed by FAO. Eight such indicators are summarized in table III.1.

28. Changes in the ratio of world cereal stocks to trend world utilization provide the first of these indicators. At the forecast level, the ratio of world cereal stocks at the end of the 1993/94 seasons to trend utilization in 1994/95 is at the mid-point of the 17-18 per cent range, which the FAO secretariat considers the minimum necessary to safeguard world food security. The forecast ratio for 1993/94 is lower than that for 1992/93 as well as the 1986/87-1990/91 average.

29. The ratio of supplies to requirements among the major wheat and coarse grains exporters represents the exporters' ability to meet the demand from abroad. 7/ A similar measure is the level of closing cereal stocks held by the main exporters as a percentage of total disappearance (domestic consumption plus exports). Both of these indicators show a deterioration in supplies relative to 1992/93, as well as compared to the average for 1986/87-1990/91. Among individual commodities, the sharpest deterioration occurred in the case of maize.

30. China and India with their large populations and CIS account for a major part of world cereal utilization, while China and the CIS account for a substantial proportion of global grain imports. Notable shortfalls in their

Table III.1: Changes in food security indicators

		Average a/	1991/92	1992/93	1993/94 b/
1.	Ratio of world cereal stocks to world cereal consumption trends	22	19	21	17
2.	Ratio of five major exporters c/ supplies to requirements	1.26	1.18	1.22	1.17
3.	Closing cereal stocks as a percentage of total disappearance of major exporters:				
	Wheat c/	28.5	23.9	26.9	28.1
	Coarse grains c/	30.4	16.9	24.1	15.2
	Rice d/	11.3	11.1	10.6	8.0
	Total	25.7	17.5	21.9	17.2
		Annual trend growth rate 1985/86-1993/94	Percentage change from the trend		
4.	Changes in cereal production in China, India and CIS (+Georgia)	+1.88	-3.75	+0.86	-2.27
5.	Changes in production of cereals in LIFD countries	+2.48	+0.30	-0.14	-2.11
6.	Changes in cereal production in LIFDCs less China and India	+2.35	+0.56	-1.42	-0.70
		Percentage change from previous year			
7.	Export price e/ movements (annual averages)	Wheat	+27.1	-4.0	0.0
		Maize	+3.8	-11.8	+15.5
		Rice	+8.6	-7.9	-10.1
8.	Export price movements (November averages)	Wheat	+31.6	-3.3	+2.8
		Maize	+6.0	-11.3	+24.5
		Rice	-1.0	-7.8	+30.7

Source: FAO, "Assessment of the current world food security situation and recent policy developments" (CFS: 94/2, February 1994 and 94/2 Sup.1, March 1994).

(Footnotes on following page)

(Footnotes to table III.1)

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a/ 1986/87-1990/91 average.

b/ Forecast.

c/ Argentina, Australia, Canada, European Union, United States.

d/ China, Pakistan, Thailand, United States, Viet Nam.

e/ Wheat = US No. 2 Hard Winter: Maize = US No. 2 Yellow; Rice = Thai, 100 per cent 2nd grade. 1993/94 prices for wheat and maize are averages of July 1993-February 1994 and rice of January-December 1993.

domestic output, therefore, can have a significant influence on the world markets. 8/ Thus, the fourth indicator represents the change in cereal production of this group of major consumers. This indicator shows a deterioration in combined cereal production in these countries in 1993/94, with production some 2.6 per cent below the 1985/86-1993/94 trend. This was largely due to below-trend production of 3.4 per cent and 2.8 per cent in China and India respectively.

31. Changes in aggregate cereal production in LIFD countries provide the fifth indicator. Indicator 6 in table III.1 excludes the production of China and India, which weigh heavily in the LIFD group, and thus gives the same information for the remaining LIFD countries which host a significant proportion of the world's most vulnerable population. While the negative production change in indicator 5 was influenced by similar changes in output in China and India, the picture appeared somewhat brighter for the remaining LIFD countries, where the production deviation from trend in 1993/94, though negative, was less than 1 per cent compared to 1.6 per cent in 1992/93.

32. Indicators 7 and 8 provide a comparison of export prices of the major cereals. A sharp upturn in international prices is an indicator of deterioration in food security for food importing countries. While annual average prices for wheat and rice in 1993/94 9/ were lower than in 1992/93, prices of all three cereals increased sharply in November 1993 relative to November 1992, reflecting tight supplies.

33. The state of world food security, as provided by the eight indicators, shows that the global food security situation deteriorated in 1993/94 compared to the previous year. Although cereal production in LIFD countries, excluding China and India, was closer to the trend, a large number of these countries rely on food imports and their food import bill could increase substantially if the most recent movements towards higher commodity prices continued into 1994.

B. Food aid

34. Food aid plays a major role in global food security. According to the World Food Programme, the total volume of food aid deliveries in 1993 reached the record level of 17.1 million tons, an increase of 12.6 per cent (1.9 million tons) over 1992 and of 24 per cent over the average total deliveries of the previous five years. 10/

35. Total cereal food aid deliveries were 15.3 million tons (in grain equivalent), 14 per cent (1.85 million tons) above the level of 1992, 24 per cent above the average cereal deliveries of the previous five years and 16 per cent above the 1980's peak of 13.2 million tons, reached in 1988.

36. Cereal deliveries have thus reached a new record since the 1960s, and remain well above the minimum target of 10 million tons a year established by the World Food Conference in 1974. Non-cereal food aid deliveries in 1993 amounted to 1.85 million tons, slightly above the 1992 level of 1.8 million tons and 34 per cent above the average level of the previous five years.

37. From the regional perspective of food aid distribution, Eastern European countries and the new independent States of the former USSR more than doubled their food aid receipts compared to 1992, becoming the largest recipient region with more than 40 per cent of the total deliveries. Quantities delivered to that region increased by almost 4 million tons.

38. The Latin America and Caribbean region received 12 per cent (or 220,000 tons) more than in 1992. Sub-Saharan Africa received 18 per cent (1,070,000 tons) less than in 1992. Food aid deliveries to Asia and Pacific were reduced by 27 per cent (730,000 tons). Total quantities delivered to the north Africa and the Middle East region decreased by 30 per cent (495,000 tons).

39. During the 1970s, Asia was the first food aid recipient region, while during the 1980s it was Africa (including northern Africa). From 1990 to 1992, sub-Saharan Africa was the first recipient.

40. In value terms, according to data currently available only for the year 1992, food aid disbursements by member countries of the Development Assistance Committee (DAC) of the Organisation for Economic Cooperation and Development (OECD) amounted to US$ 3,360 million at current prices. These disbursements represented only 5.4 per cent of their total official development assistance at current prices, against 6.1 per cent for 1991 and an average of 8.2 per cent for the previous 10 years.

41. The record level of 17.1 million tons occurred in a year during which the Uruguay Round of multilateral trade negotiations were concluded with a Final Act that, as noted by FAO "recognizes the value of existing agreements and guidelines on food aid, including the FAO Principles of Surplus Disposal and the need to provide food aid as grants or on terms no less concessional than in article IV of the Food Aid Convention" 11/ but which raised a number of questions concerning its possible effects on the future level of food aid donations. In this respect, it is felt by certain analysts that while some exporting countries may be under internal pressure to increase their food aid in order to compensate for reduced export subsidies the agreement may also generate a reduction of the exportable surpluses, a source of food aid.

C. External assistance to agriculture

42. The International Development Strategy for the Fourth United Nations Development Decade adopted by the General Assembly in December 1990, 12/ has emphasized the importance of raising agricultural output in developing countries, both as a means of revitalizing their economic growth in the 1990s and of strengthening their food security and self-reliance. The Strategy notes that a number of steps are at the international level to promote agricultural development during the Decade. In particular, it states that "Finance for investments in the agricultural sector and technical assistance should form part of programmes for development cooperation, both bilateral and multilateral". 13/

43. External assistance flows to agriculture have tended to decline in real terms in recent years, despite a moderate upturn in disbursements in 1991. This applies particularly to commitments, as well as the much lower figures of

disbursements, the latter following the former with a lag of several years (see table III.2).

44. Commitments of external assistance to agriculture in 1992 (the last year for which complete information is available) fell to $11.3 billion. At constant 1985 prices this represented $6.9 billion, the lowest amount committed since the start of the current decade.

45. The concessional component of external assistance to agriculture continued to decline, representing 70 per cent of total commitments in 1992, down from 75 per cent in 1990 and 76 per cent in 1988.

46. Bilateral commitments in 1992 totalled $4 billion. By contrast, multilateral commitments declined slightly. All bilateral commitments, and nearly half of multilateral ones, were concessional in character.

47. Preliminary information for 1992 suggests a sharp decline in multilateral commitments. The decline reflected reduced commitments by the World Bank, regional development banks and, to a lesser extent, UNDP/FAO/Consultative Group on International Agricultural Research (CGIAR). Information for bilateral commitments in 1993 is not yet available.

Table III.2. External assistance to agriculture: concessional and non-concessional

(Current prices, millions of U.S. dollars)

	Total commitments				Total disbursements		
	1989	1990	1991	1992	1989	1990	1991
Total commitments/Disbursements	14 712	12 836	12 099	11 303	9 616	7 798	8 046
of which grants	5 813	5 214	5 105	874	4 352	1 661	1 017
Bilateral	7 992	4 765	4 109	4 128	4 908	955	8 669
of which grants	5 139	4 497	5 340	n.a.	3 746	954	869
Multilateral	7 320	8 071	7 990	7 175	7 502	6 843	7 177
of which grants	674	717	765	674	606	707	748
World Bank	4 047	4 443	5 085	3 583	4 893	3 691	4 051
IBRD	2 596	2 426	3 310	1 850	3 087	2 304	2 375
IDA	1 451	2 017	1 775	1 733	1 806	1 387	1 676
IFAD	239	348	280	374	206	185	181
Regional development banks	2 076	2 444	1 869	2 494	1 788	2 313	2 263
OPEC multilateral	355	182	74	98	37	0	0
UNDP/FAO/CGIAR	603	654	682	626	578	654	682

Source: FAO.

IV. RECENT DEVELOPMENTS IN THE LIBERALIZATION OF INTERNATIONAL AGRICULTURAL TRADE

48. The Uruguay Round Agreement on Agriculture subjects national agricultural policies to a set of binding multilateral disciplines which will require far-reaching changes in national policies regarding agricultural production and trade, with major implications for international agricultural markets and global food security, including in particular the food security of low-income food deficit countries. This chapter describes the principal elements of the Uruguay Round agricultural agreement and provides an initial assessment of its implications. 14/

A. Principal elements of the Uruguay Round Agreement on Agriculture

49. The Final Act of the Uruguay Round was signed on 15 April 1994 at Marrakesh, Morocco, bringing to a conclusion seven years of negotiations on a wide variety of subjects. The negotiations on agriculture were perhaps the most difficult area of the Round. The parts of the Final Act that are directly related to agriculture include the following: (a) the Agreement on Agriculture, (b) the Agreement on the Application of Sanitary and Phytosanitary Measures (SPS) and (c) the Decision on measures concerning the possible negative effects of the reform programme on least developed and net food-importing developing countries. Agricultural trade is also subject to other Agreements and Understandings included in the Final Act, such as the Agreement Establishing the World Trade Organization and the General Agreement on Tariffs and Trade (1994) (GATT 1994). Tariff concessions and bindings, as well as domestic support and export subsidy commitments related to agricultural products are contained in individual members' schedules. A members' schedule will become a schedule to GATT 1994 on the day on which the Agreement Establishing the World Trade Organization enters into force for that member.

50. The Agreement on Agriculture describes the general framework of rules and disciplines to govern trade in agriculture. The main provisions of this Agreement are: market access; domestic support and export competition commitments and disciplines; special market access safeguards; due restraint; special and differential treatment; the establishment of a Committee on Agriculture; consultation and dispute settlement; and continuation of the reform process. 15/

51. The commodity coverage of the Agreement on Agriculture includes most of the products normally considered as part of agriculture (i.e. it excludes fishery and forest products), except that it also excludes rubber, jute, sisal, abaca and coir. The products not covered by the definition of agriculture are subject to the general rules provided in GATT 1994 and the other multilateral trade agreements.

52. The commitments of the developed countries to reduce support and export subsidies and to expand market access are to be completed within six years, i.e. by the year 2000 (assuming that the Agreement establishing the World Trade Organization comes into effect in 1995 as expected), whereas the commitments of the developing countries should be implemented over a 10-year period, i.e. by the year 2004. The main elements of the Agreement on Agriculture are summarized in box 1 below.

Box 1. MAJOR ELEMENTS OF THE AGREEMENT ON AGRICULTURE - A SUMMARY

<table>
<tr>
<th>Market access</th>
<th>Export competition</th>
<th>Domestic support</th>
</tr>
<tr>
<td>
. Base period: 1986-1988.
. Implementation period: 1995-2000.
- Commitments on access to be implemented in equal annual instalments.
. Tariffication of NTMs
- Special treatment clause: no tariffication of NTMs for certain products - valid during the implementation period. b/
- Safeguard provision: for tariffied products only - valid during implementation period.
. Reduction of agricultural tariffs (including those resulting from tariffication) on a simple average basis by 36 per cent (with a minimum reduction of 15 per cent per tariff line).
. Minimum access commitments: 3 per cent of domestic consumption in the first year, rising to 5 per cent by end of implementation period.
- For non-tariffied products; initially 4 per cent, rising to 8 per cent by end of implementation period (6 years);
- For such products if a predominant staple in the traditional diet of a developing country: initially 1 per cent, rising to 4 per cent by end of implementation period (10 years).
. Current access guarantee: maintenance of current access opportunities (i.e. the quantity of imports in the 1986-1988 base period) which exceed the minimum access.
</td>
<td>
. Base period: 1986-1990 or 1991-1992.
. Implementation period: 1995-2000.
- Flexibility in the implementation of reduction commitments. a/
. Reduction of outlays on export subsidies: by 36 per cent of base period level - initial cut of at least 6 per cent in first year of implementation period and thereafter in equal annual instalments.
. Reduction of quantity of subsidized exports: by 21 per cent base period level - initial cut of at least 3.5 per cent in first year of implementation period and thereafter in equal annual instalments.
. Non-circumvention of commitments: undertaking not to circumvent export subsidy commitments by means such as tying food aid to commercial exports, etc.; internationally agreed disciplines to govern export credits, export credit guarantees or insurance programmes are to be developed.
</td>
<td>
. Base period: 1986-1988.
. Implementation period: 1995-2000.
- Commitments on reduction to be implemented in equal annual instalments.
. Reduction of total AMS: (comprising both product-specific and non-product-specific AMS) by 20 per cent.
. "Green box" measures: exempted from inclusion in calculation of total AMS (to be reduced).
. Payments under production - limiting programmes: exempted from reduction commitment if they are on the basis of fixed area and yields (or number of head for livestock), or on a maximum of 85 per cent of the base level of production.
. De minimis provision: exempts from reduction commitments AMS which does not exceed 5 per cent of the value of production of a basic product (in the case of product-specific support), or of the value of total agricultural production (in the case of non-product-specific domestic support).
</td>
</tr>
<tr>
<td colspan="3">
Due restraint ("peace clause") provision - valid during the implementation period:
. "Green box" policies (in conformity with Annex 2 of the Agreement) are non-actionable for purposes of countervailing duties and other GATT challenges;
. All domestic support measures in conformity with the Agreement, including direct payments under production-limiting programmes as well as within the de minimis levels, are exempt from the imposition of countervailing duties as long as they do not cause injury or the threat thereof, and are also exempt from other actions under GATT so long as support to specific commodities do not exceed that decided in 1992;
. Export subsidies within the constraints of the Agreement are exempt from challenges under GATT and subject to countervailing duties only if they cause injury or the threat thereof.
</td>
</tr>
<tr>
<td colspan="3">
S & D provisions: Reduction commitments for developing countries are two thirds of those applying to developed countries. Least developed countries (LDCs) are not required to undertake reduction commitments. Developing countries have the flexibility of up to 10 years (i.e. to 2004) to implement reduction commitments.
</td>
</tr>
</table>

Source: UNCTAD compilation.

(Footnotes on following page)

(Footnotes to Box 1)

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a/ (i) Cuts in export subsidies may begin from the 1991 to 1992 average if higher than the base period level but must be reduced to the final commitment levels by end of the implementation period in equal annual instalments; and (ii) export subsidies in any year may exceed the corresponding annual commitment levels provided that such subsidies, on a cumulative basis (from the beginning of the implementation period to the year in question), do not exceed by more than 3 per cent in the case of outlays and more than 1.75 per cent in the case of quantities, the corresponding commitment levels (on a cumulative basis) specified in the country's schedule.

b/ The other exceptions to the general requirement of tariffication are: (i) cases in which countries can invoke any general, non-agriculture specific provisions of GATT 1994, such as for example the balance-of-payments provisions; and (ii) the special treatment for LDCs which exempts them from undertaking reduction commitments.

1. Market access commitments

53. There are three elements to the commitment on market access: tariffication, tariff reduction and access opportunities. Under the tariffication commitments, specific non-tariff barriers (quotas, variable levies, minimum import prices, discretionary licensing, restrictions applied through State trading measures, voluntary restraint agreements and similar border measures) are to be abolished and converted into an equivalent tariff (ad valorem or specific). The basic approach is to set a tariff equal to the difference in 1986-1988 between the internal price and import unit value c.i.f. converted into national currency. Adjustments may be made for quality or variety.

54. Secondly, tariffs, including those resulting from tariffication, shall be reduced by 36 per cent (on a simple average basis) over all commodities over the six-year implementation period, with a minimum rate of reduction of 15 per cent for each tariff item. For developing countries the figures are 24 and 10 per cent. The tariff reduction will be made in equal annual instalments and all specified customs duties will be legally binding.

55. As existing non-tariff measures (NTMs) have sometimes resulted in zero or negligible imports, and their "tariffication" may result in prohibitively high duties, special provisions concerning minimum access opportunities have been included. Where there are no significant imports, minimum access equal to 3 per cent of domestic consumption in 1986-1988 will be established for 1995 rising to 5 per cent of base year consumption at the end of the implementation period. Minimum access opportunities will be implemented on the basis of a tariff quota at low rates provided on a most-favoured nation basis. In the case where current access opportunities are more than the minimum, they will be maintained and may be increased during the implementation process.

56. A special treatment clause (annex 5 of the Agreement) allows exceptions to the tariffication obligation for certain designated products reflecting (a) non-trade concerns, i.e. food security and environmental protection, and (b) a predominant staple in the traditional diet of a developing country. Although phrased in general terms, this clause was intended to take into account, in particular, the problems of Japan and the Republic of Korea in the rice sector. These countries are obliged to open a minimum access commitment regarding rice over the implementation period (6 years for Japan, 10 years for Korea). The continuation of such special treatment after the implementation period will be subject to negotiation.

57. Special safeguard provisions relating to market access are also included in the Agreement. Under certain conditions, 16/ additional duties can be imposed when there are either import surges or low import prices (both compared with 1986-1988 levels). In the case of import surges (defined by specified trigger levels above average imports in the previous three years and the most recent change in consumption), imposition of additional duties shall not exceed one third of the ordinary customs duties in effect. In the case of low import prices (in national currency terms), an additional duty can be charged which progressively increases as the price level drops further below the 1986-1988 level. Recourse to this special safeguard provision is not subject to domestic

injury test. The special safeguard mechanism will remain in force for the duration of the reform process, as modified by the outcome of negotiations under the continuation clause.

2. Domestic support

58. The introduction of reduction commitments on domestic support marks perhaps the greatest single innovation of the Agreement on Agriculture. 17/ The general approach adopted has been to divide policies into two groups: (a) policies which have minimal or no production or trade distorting effects ("green box"), and (b) policies subject to reduction commitments. The total support given to agriculture in 1986-1988 by the latter policies, measured by the total aggregate measure of support (total AMS), is subject to reduction commitments of 20 per cent in the case of developed countries over the period 1995-2000 and 13.3 per cent in the case of developing countries in the period 1995-2004. Reduction commitments refer to agricultural sector-wide levels of support and not to individual commodities.

59. "Green box" policies, which are exempt from reduction commitments, are those which are deemed to have no, or at most minimal, trade-distorting effects or effects on production and meet the criteria that they do not entail price support for producers, which is provided by the Government and does not involve transfers from consumers. The list of exempted policies includes general services (research, training, extension, inspection, marketing and promotion, infrastructure), food security stocks, domestic food aid and certain direct payments to producers ("decoupled" income insurance and safety net programmes, disaster relief, producer or resource retirement schemes, investment aids, environmental programmes and regional assistance).

60. In addition to the "green box" category, some other policies are excluded from AMS. These include, for the developing countries, investment subsidies that are generally available to agriculture and agricultural input subsidies generally available to poor farmers in developing country members. Policies which amount to a small percentage transfer value to producers (less than 5 per cent of the value of production for developed countries, and less than 10 per cent for developing countries) are also excluded under the de minimis rule. Finally, direct payments to production-limiting programmes have been excluded from the current AMS total, providing certain conditions are met, namely, that they are decoupled or payments are made on 85 per cent or less of production in the base period or on a fixed number of head livestock. The consequence of these provisions is to exclude deficiency payments under United States agricultural programmes and compensation payments under the reformed European Union common agricultural policy.

3. Export subsidies

61. The Agreement on Agriculture spells out a list of export subsidies that are to be reduced, including: direct subsidies; sale from stocks by Governments at prices lower than the domestic market price; export payments financed by obligatory levies; subsidized export marketing costs; and special domestic

transport charges. The volume of exports benefiting from such subsidies must be reduced by 21 per cent and the expenditure on export subsidies by 36 per cent over the 1995-2000 period. Reductions will be implemented on a product-specific basis according to the specific commitments included in the Schedules, which specify the budgetary outlay and financial commitment levels for each year from 1995-2000. Calculations of the commodity-specific final level of subsidized exports are based on average 1986-1990 levels. However, exporters would in certain cases be allowed to maintain a higher level of subsidized exports in the years up to 1999 by availing themselves of a special option. Under this option countries may start to make reductions from the subsidized levels of 1991-1992 or 1986-1990, whichever is higher, though they would still be required to achieve the same final level of reduction by the year 2000.

62. The Agreement on Agriculture also provides for prevention of circumvention of export subsidy commitments, including some important provisions on food aid, namely, that it should not be tied directly or indirectly to commercial exports; that food aid transactions should be carried out in accordance with the FAO Principles of Surplus Disposal; and that such aid should be provided to the extent possible in full grant form or on terms no less concessional than those provided for in article IV of the Food Aid Convention 1986. Members have undertaken to work towards internationally agreed disciplines on use of export credit and credit guarantees.

63. Article 12 on disciplines on export prohibition and restriction concerns limitations on exports of foodstuffs under article XI 2 (a) of GATT that allows such restrictions "temporarily applied to prevent or relieve critical shortages of foodstuffs or other products essential to the exporting contracting party". Exporters must in future consider the effects on importing members' food security and must consult with importing members having a substantial interest at their request.

4. Special and differential treatment for developing countries

64. The provisions on special and differential treatment (S and D) for developing countries consist basically of three elements. First, as discussed above, developing countries are given more time to adjust and are expected to make smaller reductions in support. Thus the period of implementation is 10 years, not 6, and reduction commitments in the areas of market access, domestic support and export competition amount to two thirds of those expected from developed countries. Secondly, developing countries are allowed a higher de minimis level of domestic support (10 per cent instead of the 5 per cent for developed countries). Moreover, the least developed countries are exempt from the reduction commitments altogether.

65. The second area where developing countries benefit from more favourable treatment is with respect to the various types of policies that are "acceptable" to under the Agreement. As regards export subsidies developing countries are allowed to provide subsidies to reduce the marketing costs of agricultural products and differential internal transport costs, which developed countries must curtail. Regarding domestic support, the "green box" category has special

provisions for developing countries in regard to public stockholding for food security purposes and domestic food aid.

66. Developing countries may exclude from the calculation of the total AMS the following policies: (a) investment subsidies which are generally available to agriculture, (b) domestic support to producers to encourage diversification from the growing of illicit narcotic crops, and (c) agricultural input subsidies provided to low income or resource poor producers which are available to all producers.

67. Thirdly, there are special provisions to mitigate the adverse effects of the agricultural reform programme on the least developed and net food-importing developing countries contained in the Decision on measures concerning the possible negative effects of the reform programme on least developed and net food importing countries (see sect. B, subsect. 3 below).

5. Due restraint

68. Under the so-called "peace clause" (art. 13), during the implementation period, domestic support measures which are exempted from reduction commitments are considered non-actionable subsidies and exempt from actions based on articles II and XVI of GATT 1994 and part III of the Agreement on Subsidies and Countervailing Duties. Domestic support measures subject to reduction commitments and other exempted subsidies, including export subsidies applied within the limits of the commitments or otherwise in conformity with the Agreement, are also exempted from actions under the provisions of the Agreement on Subsidies and Countervailing Duties and from claims of nullification and impairment of tariff concessions (countervailing duties may however be imposed upon a determination of injury or threat thereof). The Agreement also specifies that members will exercise due restraint in the application of their rights in relation to other domestic support measures and export subsidies included in the reform programme and applied by another country.

6. Other provisions

69. A Committee on Agriculture shall be established which will review progress in the implementation of commitments. In the context of the review process, any member may raise any matter relevant to the implementation of commitments under the reform programme. The provisions of the Understanding on Rules and Procedures Governing the Settlement of Disputes shall apply to consultations and the settlement of disputes relevant to the Agreement on Agriculture. The Agreement also includes a continuation clause which provides that negotiations for continuing the reform process will be initiated one year before the end of the implementation period.

7. Agreement on Sanitary and Phytosanitary Measures

70. Article 14 of the Agriculture Agreement commits members to give effect to the Agreement on Sanitary and Phytosanitary Measures (SPS). This latter

Agreement recognizes that Governments have the right to take sanitary and phytosanitary measures but that such measures should be applied only to the extent necessary to protect human, animal or plant life and should not arbitrarily or unjustifiably discriminate between members where identical or similar conditions prevail.

71. In order to harmonize sanitary and phytosanitary measures on as wide a basis as possible, members are encouraged to base their measures on international standards, guidelines and recommendations where they exist, including the Codex Alimentarius and the International Plant Protection Convention (IPPC). However, members may maintain or introduce measures which result in higher standards if there is scientific justification or as a consequence of consistent decisions based on an appropriate risk assessment. The Agreement on SPS spells out procedures and criteria for the assessment of risk and the determination of adequate levels of protection.

72. It is expected that members would accept the sanitary and phytosanitary measures of others as equivalent if the exporter demonstrates to the importing member that its measures achieve a level of protection appropriate to the importer. The Agreement on SPS includes provisions on control, inspection and approval procedures.

73. The Agreement on SPS also contains requirements on transparency, including the publication of regulations, the establishment of national inquiry points and notification procedures. It also establishes a Committee on Sanitary and Phytosanitary Measures which, among other things, would provide a forum for consultations, maintain contact with other relevant organizations and monitor the process of international harmonizations.

B. Implications of the Agricultural Agreement: an initial assessment

74. A precise quantitative assessment of the results of the Uruguay Round Agricultural Agreement will have to await a detailed study of the Schedules of Commitments of at least the major participants in agricultural trade, as well as an understanding of the policy measures to be adopted by Governments in conforming to their obligations. However, a preliminary study of the Schedules of major OECD countries suggests the following qualitative conclusions.

1. Impact on trade flows

(a) Market access

75. Tariffication is unlikely to have a particularly strong impact on trade flows in the next few years. The main reason is that the resulting tariffs have been set at rather prohibitive levels in many cases (see table IV.1). Furthermore, where the reduction of such tariffs could have had a major impact on trade flows, Governments have made use of the option of reducing them by only 15 per cent over the implementation period. Moreover, Governments have notified

Table IV.1: Tariffs for selected tariffied products, by major market a/

(percentage)

PRODUCT	CANADA				EUROPEAN UNION				JAPAN				UNITED STATES			
	Within-quota		Above-quota		Within-quota		Above-quota		Within-quota		Above-quota		Within-quota		Above-quota	
	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final	Initial	Final
Beef & veal	0	0	37.9	26.5	19.2 (4.0-20.0)	19.2 (4.0-20.0)	213.0 (124.8-244.8)	141.5 (79.9-157.0)					4.7 (1.7-10.0)	4.7 (1.7-10.0)	31.1	26.4
Pig meat					26.7 (0-42.4)	26.7 (0-42.4)	84.8 (56.5-100.4)	54.3 (35.6-66.2)								
Sheep meat					5.0 (0-10.0)	5.0 (0-10.0)	144.0 (89.8-261.4)	98.2 (57.5-167.3)								
Poultry meat	10.0 (0-17.5)	4.4 (0-11.2)	234.0 (182.0-279.8)	199.0 (154.7-253.2)	27.5 (0-79.2)	27.5 (0-79.2)	115.6 (45.2-247.5)	73.9 (28.9-158.4)								
Sausages					21.9 (17.6-26.2)	21.9 (17.6-26.2)	98.5 (55.1-81.9)	43.8 (35.3-52.4)								
Eggs	4.0	1.7	236.5 (162.3-280.4)	200.0 (163.5-236.3)	15.0	15.0	46.8	30.0								
Egg products	14.0 (8.0-20.0)	8.0 (2.6-8.6)	185.6 (59.4-348.1)	157.9 (59.0-295.9)	27.3 (5.9-50.2)	27.3 (5.9-50.2)	84.5 (14.8-156.9)	54.1 (9.5-100.4)								
Milk	10.3 (2.0-17.5)	4.4 (0.9-7.0)	302.3 (237.2-347.8)	257.0 (201.6-295.7)	18.0	18.0	56.1	44.9	22.2 (0-35.0)	22.2 (0-35.0)	125.1 (25.1-309.6)	105.1 (21.4-263.1)	7.0 (1.1-17.5)	7.0 (1.1-17.5)	82.6 (34.8-275.6)	70.3 (29.5-234.3)
Butter	11.2 (5.4-17.5)	4.9 (2.3-7.5)	360.1 (351.4-368.9)	306.1 (298.7-313.6)	26.8 (25.4-28.0)	26.8 (25.4-28.0)	97.1 (87.5-106.8)	62.1 (56.0-68.3)	35.0	35.0	354.0 (245.5-282.6)	224.5 (208.7-240.3)	6.6 (3.3-10.0)	6.6 (3.3-10.0)	58.5 (48.4-68.6)	49.8 (41.2-58.3)
Cheese	1.8 (1.5-1.8)	0.8 (0.6-0.8)	289.0	245.6	23.1 (4.3-35.2)	23.1 (4.3-35.2)	84.8 (9.1-114.6)	54.3 (5.8-73.5)					12.7 (6.4-25.0)	12.7 (6.4-25.0)	58.0 (37.3-80.3)	49.3 (31.7-68.2)
Whey	10.7	4.8	244.9	208.2					30.0 (25.0-35.0)	30.0 (25.0-35.0)	982.0 (25.0-1004.4)	487.7 (21.3-683.8)				
Wheat	2.7	1.1	73.8 (57.7-90.0)	62.7 (49.0-76.5)	0	0	167.7 (131.5-203.8)	167.2 (83.8-130.6)	6.7 (0-20.0)	6.7 (0-20.0)	352.7	298.4				
Wheat products	7.2 (0-17.5)	3.1 (0-7.5)	54.3 (44.0-68.8)	46.3 (42.2-58.1)					23.0 (12.5-25.0)	23.0 (12.5-25.0)	388.1 (337.4-495.6)	329.4 (286.5-420.5)				
Barley	1.8	0.7	88.2 (25.1-111.4)	58.0 (21.3-94.7)					0	0	277.5	248.8				
Barley products	6.8 (0-20.0)	2.9 (0-8.6)	86.2 (16.3-97.4)	41.2 (0-62.8)					21.0 (20.0-25.0)	21.0 (20.0-25.0)	361.0 (178.9-486.1)	306.6 (151.5-416.8)				
Maize							152.5	98.4								
Sorghum							191.4	122.4								
Rice									0	0	*	*				
Rice products									25.0	25.0	*	*				
Peanuts									10.0	10.0	793.0	673.9	12.8 (10.6-15.0)	12.8 (10.6-15.0)	173.6 (156.0-192.7)	147.8 (131.8-163.8)
Peanut butter													45.2	45.2	155.0	131.8
Sugar					0	0	310.2 (277.5-342.9)	248.1 (221.9-274.2)					21.7	21.7	244.4 (235.8-248.6)	207.7 (200.4-211.5)
Fructose					20.0	20.0	76.3	61.1								

Source: UNCTAD secretariat compilation based on part IV of schedules of concessions annexed to the Marrakesh Protocol of April 1994.

* No above-quota tariffs. Non-tariff measures affecting rice and rice products not tariffied in Japan.

a/ Where different tariffs apply to components of a product group, the simple average tariff for the product group is indicated along with the tariff range, shown in parenthesis immediately below the average.

/...

their intention to make use of the special safeguard provisions in respect of additional duties vis-à-vis these products.

76. For some products the impact of access commitments (minimum and current access tariff quotas) on additional trade flows may be significant for those products where the increased quantities concerned represent a significant share of world trade (e.g. beef, dairy products, and peanuts) (see table IV.2). However, for products such as wheat and sugar, the market share covered by the increases under the minimum access commitments is rather small. Actual trade flows may be less than indicated by the access commitments, as these only require that countries provide access opportunities (through tariff quotas at "low" rates, which may be as high as 32 per cent), which does not guarantee that the quantities concerned will actually be imported.

Table IV.2: Aggregate access commitments (minimum and current) of OECD countries, for selected products

Product	Total access commitments (Thousands of tons)		Percentage of 1992 world exports	
	Initial	Final	Initial	Final
Beef and veal	240.9	904.3	3.0	11.2
Pig meat	17.8	87.4	0.5	2.4
Sheep meat	280.4	280.6	30.9	30.9
Poultry meat	63.3	77.5	2.1	2.6
Sausages	0.1	4.6	0.04	2.0
Milk	1 554.2	1 901.7	27.7	33.9
Butter	81.2	94.4	6.3	7.4
Cheese	68.2	154.2	3.1	6.9
Whey	3.6	3.6	0.5	0.5
Wheat and wheat products	6 658.6	6 924.4	5.6	5.8
Maize	2 531.3	2 531.3	3.5	3.5
Rice	380.0	759.0	2.4	4.8
Sorghum	335.0	335.0	3.5	3.5
Peanuts	60.5	112.3	5.4	10.1
Oilseeds	180.6	180.6	0.5	0.5
Vegetable oils	21.3	21.3	0.1	0.1
Sugar	1 390.2	1 412.2	8.4	8.5

Source: UNCTAD secretariat compilation based on part IV of schedules of concessions annexed to the Marrakesh Protocol of April 1994.

(b) Domestic support

77. In principle, a reduction in domestic support should reduce high cost domestic supply entailing an increase in import demand. However, since AMS reduction commitments are not product-specific but sector-wide, the possibility of shifting support among different products exists, thus permitting the application of much lower reductions to targeted sectors. In addition, a relatively large set of domestic subsidies (in particular payments under "production-limiting programmes") is exempted from the reduction commitment. The schedule of reductions in total AMS for OECD countries between 1995 and year 2000 is shown in table IV.3. Total base level AMS for these countries (taking into account the exemptions just referred to) is US$ 158 billion. This total is to be reduced to US$ 129 by year 2000, which is still rather high.

Table IV.3: Domestic support: total AMS reduction commitments a/

(Billions of U.S. dollars)

	Base b/	1995	1996	1997	1998	1999	2000
Austria	2.33	2.26	2.18	2.10	2.02	1.94	1.87
Australia	0.42	0.41	0.40	0.38	0.37	0.35	0.34
Canada	4.09	3.95	3.81	3.68	3.54	3.40	3.27
European Community	81.32	79.05	76.78	74.51	72.24	69.96	67.69
Finland	3.62	3.50	3.38	3.26	3.14	3.02	2.90
Japan	33.76	32.63	31.51	30.38	29.26	28.13	27.01
Norway	2.08	2.00	1.94	1.87	1.80	1.73	1.66
Sweden	3.14	3.04	2.93	2.83	2.72	2.62	2.51
Switzerland	3.36	3.25	3.13	3.02	2.91	2.80	2.69
United States	23.88	23.08	22.29	21.49	20.69	19.90	19.10
TOTAL	158.00	153.17	148.35	143.52	138.69	133.85	129.04

Source: UNCTAD secretarial compilations based on part IV of schedules of concessions annexed to the Marrakesh Protocol of April 1994.

a/ Express in United States dollars based on average annual exchange rates for 1986-1988.

b/ Base period is 1986-1988 average.

(c) Export subsidies

78. The levels of quantities and budgetary support have been established for each year of the implementation period thus introducing a high degree of predictability. The amount of trade covered by export subsidy commitments is significant for a number of commodities, such as wheat, beef and dairy products (see table IV.4). The amount of exports being subsidized will have to decline by 21 per cent by year 2000. Therefore, constraints on subsidized exports is one element of the Agreement which is likely to have an immediate impact on trade flows and export prices. As the commitments have been established in terms of results, Governments may use a variety of policy measures to meet their commitments. The impact on food supplies and prices will depend on the policies adopted by the major food exporting countries.

79. The Agreement on Agriculture constitutes an important first step towards stability and predictability in trade in agricultural products by establishing a binding "standstill and rollback" of protectionist measures in this sector, as a basis for further negotiations aimed at more meaningful liberalization and reform. While the situation will vary from commodity to commodity, in general, the provisions regarding market access and domestic support will still allow countries to retain high rates of protection and subsidization for selected products. Only the export subsidy commitments seem likely to have the intended impact of the Agreement during the implementation period.

Table IV.4: Export subsidies: aggregate quantities and reduction commitments of OECD countries; selected commodities

Product	Aggregate volume of subsidized exports (Thousands of tons)		Percentage of 1992 world exports		Reduction as a percentage of 1992 world exports
	Base a/	2000	Base	2000	
Wheat and wheat flour	48 230	38 100	40.4	31.9	8.5
Coarse grains	20 195	15 955	18.2	14.4	3.8
Butter and butter oil	673	533	52.5	41.6	10.9
Skim milk powder	578	275	32.5	15.5	17.0
Cheese	555	440	25.0	19.8	5.2
Pig meat	573	452	15.8	12.5	3.3
Poultry meat	404	320	13.3	10.5	2.8
Bovine meat	1 165	921	14.4	11.4	3.0
Oilseeds	2 257	1 783	6.1	4.8	1.3
Vegetable oils	296	234	1.6	1.3	0.3
Sugar	1 617	1 277	9.8	7.7	2.1

Source: UNCTAD secretariat compilation based on part IV of schedules of concessions annexed to the Marrakesh Protocol of April 1994.

a/ Base period quantities.

2. Other implications for world agricultural markets, including global food security and agricultural development policy

(a) Food availability and prices

80. Anticipated cuts in domestic production support and in export subsidies in developed countries, together with a relative improvement in market access, will probably change the pattern of world production in basic food commodities. The decline in production in those developed countries in which agriculture benefited from substantial protection in the past, and the stimulus to consumption in many of these countries following lower domestic prices, should curb exports and/or raise imports of these countries. This would lead to upward pressures on world market prices. The impact on food availability in developing countries of the anticipated changes in world market prices would depend on how such changes affect their domestic production and their capacity to earn foreign exchange. To the extent that the anticipated higher world market prices for basic food commodities (relative to other commodities) are passed on to producers in developing countries, some increase in the production of these commodities would be expected, although this would depend critically on the overall policy environment in developing countries.

81. Export earnings of developing countries from tropical products may not be affected by much, in view of the small changes expected in world market prices and the relatively inelastic demand of the main consuming countries for these commodities. As regards temperate zone products, the impact on export earnings of developing countries would depend to a large extent on the net trade position of these countries. In the case of cereals, for example, the export share of developing countries in the world market is rather small (in the order of 10 per cent), whereas their import share is considerable, over 40 per cent of world imports.

82. The effects of trade liberalization on the stability of international prices, especially those of cereals, have also been the subject of considerable debate with most commentators arguing that prices should become more stable. This conclusion is based largely on the fact that with the removal of non-tariff barriers to trade, all countries will absorb shocks in the world market to a greater degree than before, thus dampening the effects of market instability.

83. While it is likely that world agricultural prices may be slightly more stable as a result of the Uruguay Round, there is a question mark over food stocks. The general move towards liberalization and a reduced role of the Government in price support activities could lead to a fall in government stockholding of agricultural commodities, especially in the developed countries. The reduction may not be large, but there is a question as to whether the private sector would step in to fill the gap. If not, as seems likely, then global food stocks are likely to be reduced. What is probably of greater significance, particularly in the long run, is the new shape of agricultural policies.

(b) Policy options for boosting food supplies

84. The main implications for the food and agricultural policies of developing countries concern the changed set of policy options that they face in the post-Uruguay Round world. This changed policy set applies to all developing countries, including the least developed. The main differences between the two groups is that the least developed countries are not expected to reduce support levels to the agricultural sector, but they are expected to embrace the new policy disciplines. Other developing countries have to reduce support but, under the Special and Differential Treatment clause, they may cut support by less than the developed countries and spread out their reductions over more years.

85. The Agreement on Agriculture restricts the use of certain policies which, according to given criteria, "distort" agricultural production or trade. This includes many of the policies employed in the developing countries, such as minimum guaranteed prices, procurement prices and price stabilization schemes, although some exemptions are made for food security purposes. In cases where administered prices are above world prices, countries may keep administered prices above world prices, but the total amount spent on these and similar policies must not exceed the 1986-1988 level in the case of the least developed countries and must be reduced by other developing countries. As the commitment on domestic support is expressed in an aggregate measure of support there is flexibility for countries in deciding where to make cuts. This flexibility in price policy should be of considerable use to developing countries in deciding which commodities are to be given priority in the provision of support. Input subsidies, provided they are widely available to farmers in developing countries, are acceptable as far as the Agreement is concerned.

86. Under the Agreement, acceptable policies ("green box" policies) are defined as those interventions which imply either no or minimal "distortions" for domestic production or international trade. To be eligible for inclusion in this category, policies must be government funded and entail neither (a) transfers from consumers to producers through, for example, management of the price structure, nor (b) direct price support. The list of such policies is given in annex 2 to the Agreement on Agriculture; while the list of exemptions is long, many of these involve expenditures by Governments which many developing countries may not be in a position to afford. In conclusion, the challenge for many developing countries will be to develop low cost, decoupled methods of support which none the less give the necessary boost to the agricultural productivity and production their developmental situation requires.

3. Impact on the least developed and net food-importing developing countries

87. The increases that are likely in the prices of the main temperate zone food products as the result of reduction in support and export subsidies could imply rather significant increases in the import prices paid by the least developed and net food-importing developing countries, which are the large majority of developing countries. There has also been the concern that the volume of food aid, which historically has been closely linked to the level of surplus stocks,

could contract in future owing to a rundown in surplus stocks. It is in this context that the least developed and net food-importing developing countries sought during the Uruguay Round negotiations to include special measures in the Agreement on Agriculture to offset the negative impact such a situation could have on their ability to provide for minimum requirements for food imports and management of their debt and balance of payments problems. In the view of this group of countries, these measures should serve two principal objectives: first, they should be able to alleviate the burden of higher world food prices on their import bills and the balance of payment situation and, secondly, they should enhance their capacity to increase agricultural productivity and production, especially food production, with a view to reducing their current high dependency on imports.

88. As a result of these efforts and as a response to these concerns, the Agreement on Agriculture is accompanied by a Ministerial Decision on measures concerning the possible negative effects of the reform programme on the least developed countries and net food-importing developing countries (see box 2). In the main, the Decision addresses the two objectives spelt out above, but rather falls short of providing for operational and binding measures to give practical and concrete effect to these objectives.

89. First, the Decision envisages action to improve food aid by (a) reviewing the level of food aid and (b) providing an increasing share on grant terms. The Decision also promises that full consideration will be given to requests for technical and financial assistance to improve agricultural productivity and infrastructure. It goes on to promise that any agreement on export credits would make "appropriate provision" for differential treatment in favour of these countries. Finally, the Decision makes some provision for short term assistance in financing normal commercial imports from international institutions under "existing facilities, or such facilities as may be established, in the context of adjustment programmes". The loans would be from existing facilities at the World Bank or the International Monetary Fund and would be subject to conditionalities of such loans, including "in the context of adjustment programmes". To the extent that the proposed mechanisms seem to lack operational guidelines for bringing them into effect, it would appear that negotiations of such elements would be necessary in international financial institutions and within the framework of Food Aid Convention. However, the regular review of the decision by the Ministerial Conference of the World Trade Organization (WTO) and the monitoring of its follow-up by the WTO Committee on Agriculture might give the required impetus for negotiations in these forums. In this context, the Ministerial Decision should be seen as a political message to mobilize the support of Governments as well as international financial institutions to take the appropriate action within their competence to mitigate the impact on the least developed and net food-importing countries.

90. In the implementation of the agricultural reform programme, the case of African countries and the least developed countries with a relatively high level of food-import dependency combined with severe balance of payments and debt servicing difficulties and low levels of agricultural food production and productivity presents a greater challenge to policy makers in these countries as well as to the international community. Although the likely increase in agricultural food prices and reduction in export subsidies should act as an

Box 2

Decision on measures concerning the possible negative effects of the reform programme on least developed and net food-importing developing countries

1. Ministers recognize that the progressive implementation of the results of the Uruguay Round as a whole will generate increasing opportunities for trade expansion and economic growth to the benefit of all participants.

2. Ministers recognize that during the reform programme leading to greater liberalization of trade in agriculture least developed and net food-importing developing countries may experience negative effects in terms of the availability of adequate supplies of basic foodstuffs from external sources on reasonable terms and conditions, including short-term difficulties in financing normal levels of commercial imports of basic foodstuffs.

3. Ministers accordingly agree to establish appropriate mechanisms to ensure that the implementation of the results of the Uruguay Round on trade in agriculture does not adversely affect the availability of food aid at a level which is sufficient to continue to provide assistance in meeting the food needs of developing countries, especially least developed and net food-importing developing countries. To this end Ministers agree:

(i) to review the level of food aid established periodically by the Committee on Food Aid under the Food Aid Convention 1986 and to initiate negotiations in the appropriate forum to establish a level of food aid commitments sufficient to meet the legitimate needs of developing countries during the reform programme;

(ii) to adopt guidelines to ensure that an increasing proportion of basic foodstuffs is provided to least developed and net food-importing developing countries in fully grant form and/or on appropriate concessional terms in line with Article IV of the Food Aid Convention 1986;

(iii) to give full consideration in the context of their aid programmes to requests for the provision of technical and financial assistance to least developed and net food-importing developing countries to improve their agricultural productivity and infrastructure.

4. Ministers further agree to ensure that any agreement relating to agricultural export credits makes appropriate provision for differential treatment in favour of least developed and net food-importing developing countries.

5. Ministers recognize that as a result of the Uruguay Round certain developing countries may experience short-term difficulties in financing normal levels of commercial imports and that these countries may be eligible to draw on the resources of international financial institutions under existing facilities, or such facilities as may be established, in the context of adjustment programmes, in order to address such financing difficulties. In this regard Ministers take note of paragraph 37 of the report of the Director-General to the CONTRACTING PARTIES to GATT 1947 on his consultations with the Managing Director of the International Monetary Fund and the President of the World Bank (MTN.GNG/NG14/W/35).

6. The provisions of this Decision will be subject to regular review by the Ministerial Conference, and the follow-up to this Decision shall be monitored, as appropriate, by the Committee on Agriculture.

Source: Uruguay Round Final Act, Marrakesh, 15 April 1994.

incentive for increasing agricultural production in these countries, supply inelasticities resulting not only from adjustment lags but also from structural supply bottlenecks, including a low level of technology used in heavily dependent rain-fed production, renders these countries more vulnerable to the short- and medium-term impact of the reform process. There is thus a compelling case for international and domestic policy measures to address not only the short- to medium-term shortfalls in levels of food imports but also to put in place measures to enhance food productivity and production, through rural infrastructure development, upgrading of technology for agricultural production and strengthening of agricultural research.

V. SUSTAINABLE AGRICULTURAL DEVELOPMENT, INTERNATIONAL TRADE AND THE ENVIRONMENT 18/

91. Agriculture has provided food for a world population which has doubled in the past 50 years. This has been possible by an expansion in the area of land farmed and especially through increased yields following improvements in technology, together with a dramatic increase in the use of external inputs. While agricultural and food production growth has kept pace with and even surpassed population growth for the world as a whole, this performance has not been uniform. There is strong evidence that the requirement for ever-increasing agricultural output as well as for employment and income of the growing population dependent on agriculture, particularly in developing countries, cannot be accommodated in an environmentally sustainable manner with present agricultural practices and trends.

92. A sustained growth in agricultural and food production in developing countries will be a growing challenge in the years to come. Increasing production and creating employment and higher incomes for the poor in developing countries will determine to a large measure the extent to which the growing population will have access to the food they need. With urban population becoming a major component of total population, at least part of peasant agriculture must also be encouraged to generate greater marketable surpluses. A large part of the increase in production will have to be produced by greater intensification of agriculture which in turn requires more care to avoid environmental damage. This issue is of major relevance to long-term global food security.

93. Although there is not necessarily a conflict between production increases and sustainability, in practice the quest for ever increasing quantities of food has often led to unsustainable production methods and environmental degradation. Deforestation, soil erosion, deterioration of soil quality, depletion and salinization of water resources, pesticide poisoning, loss of biodiversity, pollution, climatic and biotope change are some of the major environmental effects of current agricultural practices.

94. Growing international concern about the state of the environment as well as transboundary environmental issues are also forging a linkage between environmental policies and trade.

95. This chapter attempts to put into proper perspective key issues in the relationships between sustainable agricultural development, international trade and the environment. Before turning to these relationships it is useful to define some terms. Environment and sustainable agricultural development are closely related concepts.

96. In 1988, FAO adopted the following definition of sustainable agricultural development: "Sustainable development is the management and conservation of the natural resource base, and the orientation of technological and institutional change in such a manner as to ensure the attainment and continued satisfaction of human needs for present and future generations. Such sustainable development (in the agriculture, forestry and fisheries sectors) conserves land, water, plant and animal genetic resources, is environmentally non-degrading,

technically appropriate, economically viable and socially acceptable." 19/ Sustainability in agriculture therefore encompasses environmental, technological, economic and social dimensions. 20/

A. Sustainable agricultural development and food security

97. At the national level, a number of interdependent factors are instrumental in increasing per capita food supplies. These include: poverty-reducing economic growth; the multiple role of agricultural growth in the majority of the developing countries (increasing food supplies and providing employment and income-earning opportunities to the poor, both directly and indirectly via the growth linkages of agriculture); enhanced capacity to import food; and public policy affecting food production. However, the agricultural resource constraints, in the context of wider environmental constraints, are crucial in conditioning the prospects for food production and generation of incomes in agriculture.

98. Two questions may be asked: to what extent may the resource and environmental constraints impinge on the prospects for increasing food supplies and assuring access to food by all, the very essence of food security? And can such progress be achieved while ensuring that the gains made and the potential for further gains are maintained for future generations, the very essence of sustainability?

1. Minimizing the trade-offs between the environment and agricultural development

99. The issue of agricultural resources, the environment and sustainability can be addressed in terms of (a) what is known about the land, water and energy resources, and (b) how the constraints relating to them may enter the determination of the rate of progress towards solving the food problem. 21/

100. There is substantial (though not comprehensive, nor detailed) evidence that the productive potential of at least part of the world's land and water resources is being degraded by agricultural activity (e.g. soil erosion, water-logging and salinization of irrigated lands), while other human activities reduce the agricultural capacities of particular ecosystems. In addition, agricultural activity itself can generate adverse environmental impacts, e.g. threat to biodiversity, pollution of surface and ground water sources. There is the difficult task of reconciling the short-term imperative of increasing food and agricultural production as well as incomes for the current generation with the longer-term but almost unspecifiable, need of conserving natural resources for meeting the requirements of future generations. There are commonly a number of trade-offs between the environment, food security and other aspects of development. Some of the trade-offs are avoidable, but others are not at this point in time. Hence the importance of minimizing the trade-offs.

101. For most developing countries, the environmental options are often severely constrained in the short to medium term. Some developing countries may have to clear more of their natural forests and drain part of their wetlands in order to

feed their people, promote economic growth and improve net social well-being. In addition, they cannot reduce their often low use of mineral fertilizers without endangering food security and intensifying soil degradation in fragile ecosystems under stress, and cannot exploit more fully technological options for integrated plant nutrition quickly. 22/ For some production or environmental problems, appropriate technical solutions do not yet exist and are not readily available or affordable. Any appreciable rise in food production costs and consumer prices would have adverse effects on already low consumption levels, and many countries could not afford to increase commercial food imports. Finally, many developing countries lack the local and central institutional mechanisms required to collect and analyze data relating to resource management, to assess the various options open to them, to improve the functioning of markets, and to obtain farmer and rural community support. Some of these obstacles will take at least a decade to overcome and in some instances, much longer.

2. Establishing an enabling policy environment

102. While agricultural activity often contributes to maintaining or restoring the productive capacity of the environment (e.g. land and water resources), other factors often end up destroying rather than preserving or enhancing this capacity. The main reason may relate to, for example: institutions governing access to resources (e.g. common property or open access resources) and how such institutions come under pressure when population density increases; inequality of access to land and landlessness; policies which distort incentives against the use of technology that would contribute to resource conservation; and the knock-on effects of policies which facilitate interactions between the non-poor and the poor in ways which lead to degradation (e.g. when deforestation and expansion of agriculture are facilitated by incentives to logging operations which open access roads into previously inaccessible forest areas which may have soils that cannot easily sustain crop production).

103. Understanding the role of these and other mediating variables and getting away from the simple notion that degradation can be explained by poverty alone are important for formulating and implementing policies for sustainable agriculture and resource conservation. They are important because the policy environment in the future will continue to be characterized by pressures on agricultural resources related, in one way or another, to rural poverty. Indeed, the number of the rural poor depending on the exploitation of agricultural resources will probably increase further in some countries and decline in others. Both trends can be associated with resource degradation. Therefore, the key policy problem is how to minimize adverse environmental impacts of both trends.

104. Unsustainable agricultural practices commonly take place where those involved have limited or no property or user rights to the resources they are overexploiting. The awarding of secure rights, whether individual or communal, would greatly increase their vested interest in improving resource management and investing in soil conservation and other land improvements. Property rights have a wider institutional dimension relating to the efficiency of markets and the management of public goods. Environmental trade-offs are also not minimized

in situations when the institutions controlling public goods have collapsed, or when markets are not able to value public goods such as fresh air, or to cost public "bads" such as pollution. Markets must be made to work better by defining property rights more precisely and establishing or strengthening the institutions to manage them; introducing realistic prices for goods such as water; internalizing external costs and benefits; and adopting the polluter pays principle as well as the precautionary approach. 23/ These are issues for developed and developing countries alike, but with the former in many cases better able to introduce environmental regulations to make market prices reflect the environmental costs and benefits.

105. At the national and local levels, key policy actions would need to include those which promote development, create a regulatory and incentive environment that encourage the uptake of sustainable technologies, promote decentralized, participatory, bottom-up approaches to natural resource planning and management, and contribute to slowing down the population growth rate.

106. At the international level, the required actions go well beyond the so-called technological fix, although new technologies based on the latest scientific understanding will be vitally important, as will the revival or upgrading of indigenous technologies. They include international action to channel development assistance towards sustainable agriculture in a more consistent way. The international dimension is particularly important given that much of the mismanagement of natural resources in developing countries relates to poverty and to the lack of economic growth to provide better and sustainable livelihoods outside agriculture. Minimizing the trade-offs needs a global economic environment such that the developing countries can significantly increase income opportunities outside agriculture. Therefore, any policies which affect the development prospects of the developing countries via the link of the international economic environment are of direct importance to the objective of minimizing the environment-development trade-offs. Here belong the issues of trade, debt and resource flows.

B. Trade and environment

107. International trade is interrelated with sustainable agricultural development and the environment in several ways: international trade permits the location of production to be separated from the point of consumption, thus shifting stresses between importing and exporting countries; secondly, trade may lead to changes in the level of world consumption, production and income, which can have additional effects on environment-sustainable development relationships beyond the shifting around of consumption and production among countries; and the act of trading itself may have environmental consequences.

1. Agricultural trade and the environment

108. Environmental stress may be associated with the production, distribution, consumption and disposal of a product as well as its packaging. However, different commodities may cause different amounts of negative environmental side-effects or stress on the resource base: what is more, the effects differ

from country to country. Generally, there is no overall measure of environmental damage per ton produced or consumed that is applicable to all countries and ecosystems. What is reasonable to assume is that, other things being equal, the greater the per capita production or consumption, the greater the potential environmental stress caused. Per capita consumption of agricultural commodities is higher in the developed than in the developing countries. Each stage in the life cycle of an agricultural product: production, distribution, consumption and disposal, generates its own forms of environmental stress. Some of these are located in the country where the activity takes place but others may be transboundary (e.g. regional pollution of water through run-off of fertilizers or pesticides) or global (through the use of fossil fuels or chloro-fluorocarbons (CFCs) in refrigeration). It is therefore over simple to assume that the environmental consequences of production occur only in producing countries and those of consumption and disposal only in a consuming country. A careful case-by-case analysis is required to determine the geographical incidence of environmental stress between food-exporting and food-importing countries, not to mention other countries involved in the international distribution of the products as well as the transboundary and global environmental effects of particular activities involved.

109. The problem is certainly not confined to the farm; there are at least some consumption externalities which need to be taken into account. Most of the food reaches consumers, especially in urbanized societies, through processors, distributors, packers and retailers. The process involves considerable cost in processing, packaging, transport and storage. At each of these stages demands are made on non-renewable resources. At each of them, pollution and resource depletion may result. However, in some cases consumers are willing to pay more for a commodity that is organic than for the regular kind. In this case, and depending on what is meant by "organic" as well as on the whole life cycle of the product, it may be possible to reduce environmental costs while maintaining profitability.

110. Trade separates the act of production from that of consumption geographically. Thus if the source of environmental stress is in the act of production rather than consumption (a fair assumption in the case of most agricultural commodities) then an exporter is producing more not only of the good but also of the environmental negative effects, while an importer is benefiting from the fact that part of the environmental damage stemming from production takes place in another country. Furthermore, the transport and packaging involved in the distance between production and consumption adds its own forms of environmental stress.

2. Environmental policies and trade

111. The shifting of the location of environmental damage caused by trade may affect total global environmental damage by either increasing or decreasing it. In any event, it poses significant problems for international policy. This occurs for two reasons. In the case where the negative effects are purely national, the unilateral action of one country to clear up its own environmental problems may well raise its apparent production costs and hence cause a

competitive handicap for its exports and/or if the country is big enough, an increase in world trade prices, with consequences for all countries. In cases where the negative effects are transboundary or even global, international relations are affected directly and the solution adopted may well, though not necessarily, include trade policy measures.

112. In one sense, transboundary environmental effects (either between one State and others, or by all States on all States) are not related to international trade. The effect of upstream pollution in one country on other downstream countries need have nothing to do with trade. However, trade enters into these issues as one of the conceivable measures to reinforce a policy to reduce such pollution. Trade may be used as either a carrot or a stick to persuade other countries to reduce pollution at source. In other cases, however, trade enters rather more directly into the issue when the absence of trade measures opens the door to "free riders" in connection with international environmental agreements (IEAs). In both cases the use of trade measures can and does give rise to conflicts, partly because it is often hard to show that trade is an essential means to bring about the desired environmental behaviour. In any event, the use of trade measures as a carrot/stick as part of a package of measures to get international agreements on any issue, environment or other, is a controversial matter. Principle 12 of the Rio Declaration 23/ sets a benchmark with respect to it: "States should cooperate to promote a supportive and open international economic system that would lead to economic growth and sustainable development in all countries, to better address the problems of environmental degradation. Trade policy measures for environmental purposes should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade. Unilateral actions to deal with environmental challenges outside the jurisdiction of the importing country should be avoided. Environmental measures addressing transboundary or global environmental problems should, as far as possible, be based on an international consensus."

113. The important area where trade policy and transboundary environmental issues meet is undoubtedly over the use of trade measures in IEAs. Examples of different types of trade measure are (a) trade sanctions under the Montreal Protocol on Substances that Deplete the Ozone Layer and (b) restrictions on trade under the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).

114. In this connection, there has been considerable debate at international forums in the recent past on the criteria to be used to regulate the use of trade measures in IEAs. Thus Agenda 21 of the United Nations Conference on Environment and Development set out certain principles of relevance in this regard, including, inter alia, "the principles of non-discrimination, the principle that the trade measure should be the least trade-restrictive necessary to achieve the objectives; an obligation to ensure transparency in the use of trade measures related to environment and to provide adequate notification of national regulations; and the need to give consideration to the special conditions and developmental requirements of developing countries as they move towards internationally agreed environmental objectives" (Chap. 2.22i). These principles have been elaborated further by, inter alia, the GATT Group on Environmental Measures and International Trade, which has met regularly since 1991. The linkages between environmental and trade policies continue to be high

on the agenda for intergovernmental deliberations and consensus-building in, inter alia, FAO, UNCTAD and GATT/WTO.

Notes

1/ If fishery and forestry products are included, the total figure for 1992 is about $491 billion. Agro-industrial products, basically processed agricultural products, are generally classified as manufactured products. If these are taken into consideration, then agricultural-based world trade would be considerably higher.

2/ FAO defines 42 countries in Africa, 6 countries in the Near East, 13 countries in the Far East, 9 countries in Latin America and the Caribbean and 7 countries in Oceania as low-income food-deficit countries. Low-income food-deficit countries are defined as those with an income below US$ 1,235 per capita in 1991, and which were net importers of cereals. This level of income is used by the World Bank to determine eligibility of countries for International Development Association (IDA) assistance in 1992/93.

3/ See FAO, Medium-term prospects for agricultural commodities: projections to the year 2000 (FAO, 1994) and Agriculture Towards 2010 (C93/24) (November 1993).

4/ See OECD, Agricultural policies, markets and trade: monitoring and outlook, Paris, 1994, part III.

5/ About 80 industries of a total of 600 in the International Standard Industrial Classification of All Economic Activities (ISIC), are generally considered as agro-industries. In addition, 50 other industrial activities are derived from agro-industries (clothing manufacture, furniture, footwear, etc.), but are normally not included in the latter. A number of upstream industries could also be considered as related activities, in so far as they provide agriculture or the agro-industries with intermediate inputs (fertilizers, pesticides, seeds, etc.) and capital goods (machinery and installations).

For the purpose of analysis in this paper, the following industrial branches have been included in the "agro-industries" group: food products; beverages; tobacco; textiles; leather and fur products; wood and cork products; paper; and rubber products. Owing to the high level of statistical aggregation, this grouping provides only a broad picture of agro-industries; it also includes certain products which do not embody agricultural inputs as their principal raw material, such as textiles made from artificial or synthetic fibres and synthetic rubber. Deficiencies in the basic statistics at the global level have prevented an analysis based on a more accurate definition, in terms of narrowly defined agro-industrial subsectors. See UNIDO, Industrial Development Survey, Special Issue for the Second General Conference (United Nations publication, Sales No. 74.11.B.14).

6/ See FAO, "Assessment of the current world food security situation and recent policy developments" (CFS: 94/2 and CFS: 94/2, Supplement 1) (February and March 1994).

7/ This indicator is measured as the ratio of the sum of production, imports and opening stocks to the sum of their domestic utilization plus exports.

8/ The combined production of these countries accounted for 39 per cent of world cereal production and 43 per cent of consumption over the period 1985/96-1989/90.

9/ 1993/94 prices are July-November 1993 averages for wheat and maize and the January-November 1993 average for rice.

10/ See World Food Programme, The Food Aid Monitor, special edition (April 1994).

11/ FAO, "The Uruguay Round Agreement and its implications for food security" (CFS: 94/Inf.5) (March 1994).

12/ See resolution 45/199, annex.

13/ Ibid., annex, para. 77.

14/ This chapter incorporates the initial assessment of the Uruguay Round Agreement by FAO and UNCTAD. See FAO, "Uruguay Round Agreement: A preliminary assessment", prepared by the Commodities and Trade Division (ESC/M/94/4) (March 1994); FAO, "The Uruguay Round Agreement and its implications for food security" (CFS: 94/Inf.5) (March 1994); UNCTAD, "A preliminary analysis of the results of the Uruguay Round and their effects on the trading prospects of developing countries" (TD/B/WG.4/13) (June 1994); and UNCTAD, Trade and Development Report 1994 (UNCTAD/TDR/14 and Supplement) (August 1994).

15/ The text of the Agreement should be read in parallel with the note by the Chairman of the Market Access Group on Modalities for the Establishment of Specific Binding Commitments under the Reform Programme (MTN.GNG/MA/W/24, 20 December 1993).

16/ It may only be used by members that have tariffied NTMs on a commodity and have indicated that they would have recourse to the special safeguard clause. The use of these safeguard clauses is limited to the year in which the imports surge or the price drop occurs.

17/ GATT has traditionally concerned itself with trade measures and has not been much involved in purely domestic production matters, except where these have a trade impact (e.g. articles XVI on subsidies).

18/ This chapter incorporates analyses by FAO and UNCTAD. See FAO, Agriculture: towards 2010 (C93/24) (November 1993); FAO, "Improving food security through sustainable productivity increases in fragile areas of developing countries" (CFS: 93/3) (February 1993); FAO, "International trade, environment and sustainable agricultural development" (CCP: 93/19) (March 1993); UNCTAD "Trends in the field of trade and environment in the framework of international cooperation" (TD/B/40/(1)/6) (August 1993); UNCTAD, "Experience concerning environmental effects of commodity production and

processing: synthesis of case-studies on cocoa, coffee and rice" (TD/B/CN.1/15) (September 1993); UNCTAD, "The effect of the internalization of external costs on sustainable development" (TD/B/40(2)/6) (February 1994); and UNCTAD, "Sustainable development: trade and environment - the impact of environment-related policies on export competitiveness and market access" (TD/B/41(1)/4) (July 1994).

19/ See FAO, "Aspects of FAO policies, programmes, budget and activities aimed at contributing to sustainable development" (CL 94/6) (November 1988). This definition of sustainability of agriculture needs to be considered in the context of the sustainability of the development of the total economic system. See the broader definition of sustainable development adopted by the United Nations Conference on Environment and Development (UNCED).

20/ See also Agenda 21, chapter 14, on promoting sustainable agriculture and rural development, Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigenda), resolution 1, annex II.

21/ See also FAO, Agriculture: Towards 2010 (C93/24) (November 1993).

22/ This is not to suggest that reduced use of fertilizers is always environmentally better. Environmental problems associated with excessive use of fertilizers is generally a developed country problem. Given their already quite low use of fertilizers, developing countries have a considerable margin on agronomic, economic and environmental considerations to increase fertilizer applications rather than reduce them.

23/ See the Rio Declaration on Environment and Development, Principles 15 and 16, Report of the United Nations Conference on Environment and Development, Rio de Janeiro, 3-14 June 1992, vol. I, Resolutions Adopted by the Conference (United Nations publication, Sales No. E.93.I.8 and corrigenda), resolution 1, annex I.